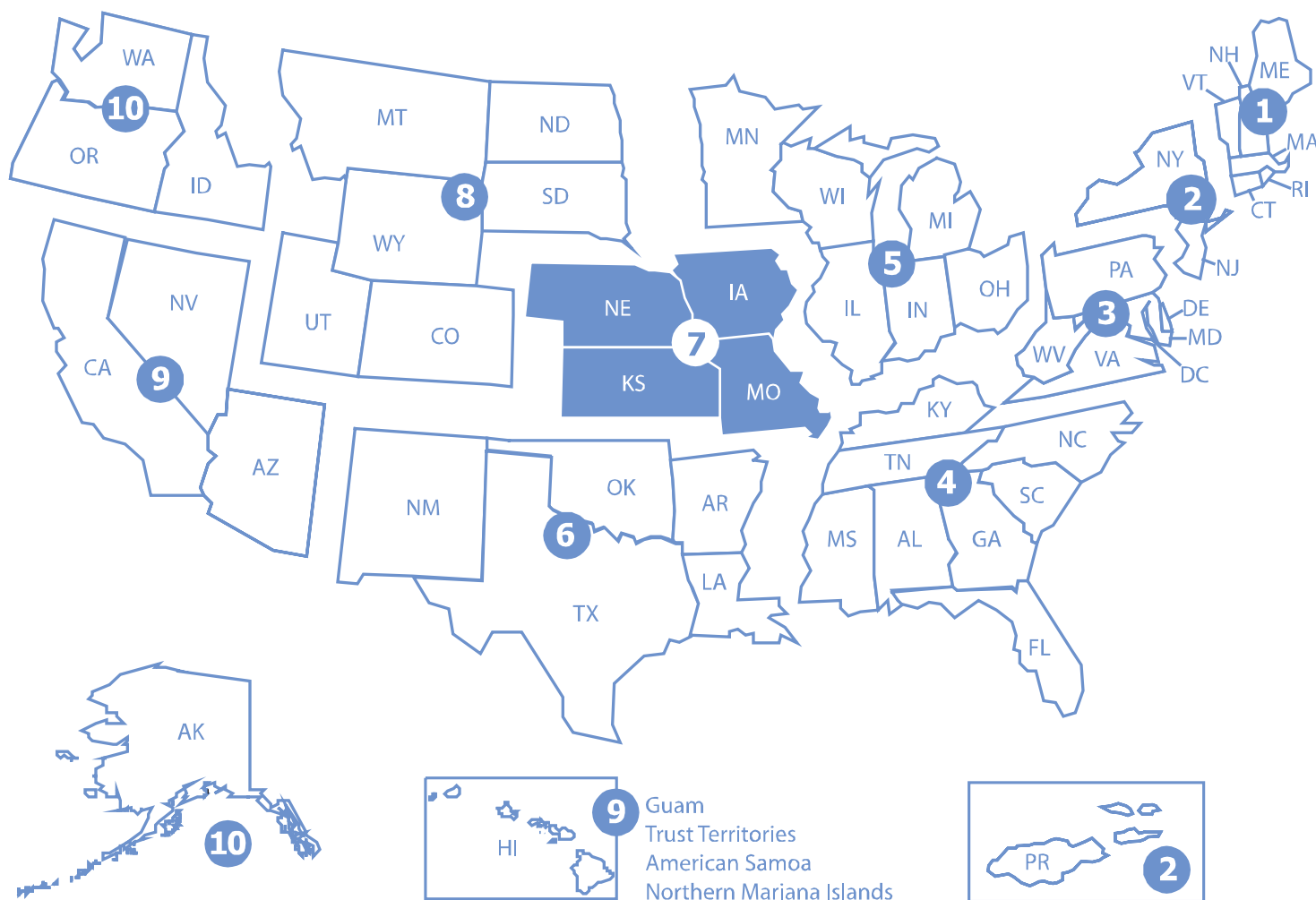




# Support Document for the Revised National Priorities List Final Rule – Washington County Lead District-Potosi



**Support Document for the  
Revised National Priorities List  
Final Rule  
Washington County Lead District—  
Potosi**

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**State, Tribal, and Site Identification Center  
Office of Solid Waste and Emergency Response  
U.S. Environmental Protection Agency  
Washington, DC 20460**

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## **EXECUTIVE SUMMARY**

Section 105(a)(8)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), requires that the EPA prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. An original National Priorities List (NPL) was promulgated on September 8, 1983 (48 FR 40658). CERCLA requires that EPA update the list at least annually.

This document provides responses to public comments received on the Washington County Lead District-Potosi site located in Potosi, Missouri, proposed on September 19, 2007 (72 FR 53509). This site is being added to the NPL based on an evaluation under EPA's Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in March 2008. Several additional sites are being promulgated concurrently.

## INTRODUCTION

This document explains the rationale for adding the Washington County Lead District-Potosi site located in Potosi, Missouri, to the National Priorities List (NPL) of uncontrolled hazardous waste sites and also provides the responses to public comments received on this site. The EPA proposed this site on September 19, 2007 (72 FR 53509). This site is being added to the NPL based on an evaluation under the Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in March 2008.

### Background of the NPL

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Sections 9601 *et seq.* in response to the dangers of uncontrolled hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act (SARA), Public Law No. 99-499, stat., 1613 *et seq.* To implement CERCLA, EPA promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA Section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP, further revised by EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On March 8, 1990 (55 FR 8666), EPA further revised the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include

criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, take into account the potential urgency of such action, for the purpose of taking removal action.

Removal action involves cleanup or other actions that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA Section 101[23]). Remedial action is generally long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA Section 101[24]). Criteria for placing sites on the NPL, which makes them eligible for remedial actions financed by the Trust Fund established under CERCLA, were included in the HRS. EPA promulgated the HRS as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 14, 1990 (56 FR 51532), EPA promulgated revisions to the HRS in response to SARA, and established the effective date for the HRS revisions as March 15, 1991.

Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the NPL.

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). At that time, an HRS score of 28.5 was established as the cutoff for listing because it yielded an initial NPL of at least 400 sites, as suggested by CERCLA. The NPL has been expanded several times since then, most recently on September 19, 2007 (72 FR 53463). The Agency also has published a number of proposed rulemakings to add sites to the NPL. The most recent proposal was on September 19, 2007 (72 FR 53909).

## **Development of the NPL**

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]).

The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The NPL, therefore, is primarily an informational and management tool. The identification of a site for the NPL is intended primarily to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites EPA believes warrant further investigation. Finally, listing a site may, to the extent potentially responsible parties are identifiable at the time of listing, serve as notice to such parties that the Agency may initiate CERCLA-financed remedial action.

CERCLA Section 105(a)(8)(B) directs EPA to list priority sites among the known releases or threatened release of hazardous substances, pollutants, or contaminants, and Section 105(a)(8)(A) directs EPA to consider certain enumerated and other appropriate factors in doing so. Thus, as a matter of policy, EPA has the discretion not to use CERCLA to respond to certain types of releases. Where other authorities exist, placing sites on the NPL for possible remedial action under CERCLA may not be appropriate. Therefore, EPA has chosen not to place certain types of sites on the NPL even though CERCLA does not exclude such action. If, however, the Agency later determines that sites not listed as a matter of policy are not being properly responded to, the Agency may consider placing them on the NPL.

## **Hazard Ranking System**

The HRS is the principle mechanism EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations -- the preliminary assessment and site inspection -- to assess the relative potential of sites to pose a threat to human health or the environment. HRS scores, however, do not determine the sequence in which EPA funds remedial response actions, because the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. Moreover, the sites with the highest scores do not necessarily come to the Agency's attention first, so that addressing sites strictly on the basis of ranking would in some cases require stopping work at sites where it was already underway. Thus, EPA relies on further, more detailed studies in the remedial investigation/feasibility study that typically follows listing.

The HRS uses a structured value analysis approach to scoring sites. This approach assigns numerical values to factors that relate to or indicate risk, based on conditions at the site. The factors are grouped into three categories. Each category has a maximum value. The categories are:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (toxicity and waste quantity); and

- people or sensitive environments (targets) affected by the release.

Under the HRS, four pathways can be scored for one or more threats as identified below:

- Ground Water Migration ( $S_{gw}$ )
  - drinking water
- Surface Water Migration ( $S_{sw}$ )

The following threats are evaluated for two separate migration components, overland/flood migration and ground water to surface water.

  - drinking water
  - human food chain
  - sensitive environments
- Soil Exposure ( $S_s$ )
  - resident population
  - nearby population
  - sensitive environments
- Air Migration ( $S_a$ )
  - population
  - sensitive environments

After scores are calculated for one or more pathways according to prescribed guidelines, they are combined using the following root-mean-square equation to determine the overall site score ( $S$ ), which ranges from 0 to 100:

$$S = \sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2}{4}}$$

If all pathway scores are low, the HRS score is low. However, the HRS score can be relatively high even if only one pathway score is high. This is an important requirement for HRS scoring because some extremely dangerous sites pose threats through only one pathway. For example, buried leaking drums of hazardous substances can contaminate drinking water wells, but -- if the drums are buried deep enough and the substances not very volatile -- not surface water or air.

## **Other Mechanisms for Listing**

There are two mechanisms other than the HRS by which sites can be placed on the NPL. The first of these mechanisms, authorized by the NCP at 40 CFR 300.425(c)(2), allows each State and Territory to designate one site as its highest priority regardless of score. The last mechanism, authorized by the NCP at 40 CFR 300.425(c)(3), allows listing a site if it meets the following three requirements:

- Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release;
- EPA determines the site poses a significant threat to public health; and
- EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to respond to the site.

## Organization of this Document

The following section addresses site-specific public comments. The site discussion begins with a list of commenters, followed by a site description, a summary of comments, and Agency responses. A concluding statement indicates the effect of the comments on the HRS score for the site.

## Glossary

The following acronyms and abbreviations are used throughout the text:

<b>Agency</b>	U.S. Environmental Protection Agency
<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 <i>et seq.</i> , also known as Superfund
<b>CFR</b>	Code of Federal Regulations
<b>EPA</b>	U.S. Environmental Protection Agency
<b>FR</b>	Federal Register
<b>HRS</b>	Hazard Ranking System, Appendix A of the NCP
<b>HRS score</b>	Overall site score calculated using the Hazard Ranking System; ranges from 0 to 100
<b>NCP</b>	National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300
<b>NPL</b>	National Priorities List, Appendix B of the NCP
<b>PA/SI</b>	Preliminary assessment/site inspection
<b>PRP</b>	Potentially responsible party
<b>RCRA</b>	Resource Conservation and Recovery Act of 1976 (U.S.C. 9601-6991, as amended)
<b>RD/RA</b>	Remedial design/remedial action
<b>RI/FS</b>	Remedial investigation/feasibility study
<b>ROD</b>	Record of Decision, explaining the CERCLA-funded cleanup alternative(s) to be used at an NPL site
<b>SARA</b>	Superfund Amendments and Reauthorization Act of 1986, Public Law No. 99-499, stat., 1613 <i>et seq.</i>

## **Response to Comments**

### **1. List of Commenters/Correspondents**

EPA-HQ-SFUND-2007-0688-0003	Correspondence dated September 19, 2007, from Matt Blunt, State of Missouri Office of the Governor
EPA-HQ-SFUND-2007-0688-0005	Comment dated November 21, 2007, from Francis Chin and Tracy Hester, Partner, Bracewell & Giuliani LLP on behalf of Baker Hughes Oilfield Operations, Inc.
EPA-HQ-SFUND-2007-0688-0005.1	Comment dated November 21, 2007, from Tracy Hester, Partner, Bracewell & Giuliani LLP on behalf of Baker Hughes Oilfield Operations, Inc.

### **2. Site Description**

The Washington County Lead District – Potosi site (Potosi) is located in southeastern Missouri in east central Washington County. It consists of a ground water lead contamination plume associated with releases from the historical mining district in the Potosi study area. Lead mining in Washington County has occurred since the early 18<sup>th</sup> century, and this district was one of the most productive barite producing areas in the world. It produced 11 million short tons of crude barite ore over an 86-year period from 1885 to 1970. The state of Missouri has identified 1,426 mines or prospects within Washington County.

With the goal of reducing the exposure to mining-related contamination as rapidly as possible, EPA in cooperation with the State of Missouri concentrated its initial investigations within the overall Potosi area on nine larger mining complexes near population centers including the area around the towns of Potosi and Mineral Point, Missouri, and on identifying contaminated public and private drinking water wells. Within the Potosi area, EPA and the state of Missouri documented extensive ground water contamination, however, based on sampling, not all the ground water contamination found at any drinking water well could be traced back to any one known source because most contaminated ground water samples were clearly downgradient of either multiple study areas or multiple mines and prospects. Therefore, EPA scored the ground water contamination as a ground water plume with no single known source. No specific sources of the lead releases were included in the HRS scoring.

EPA documented 49 drinking water wells subject to contamination above drinking water maximum contaminant levels (MCLs) for lead and an additional 23 drinking water wells that contained lead at levels significantly above background (see pages 44-46 and Reference 13, Figure 1 of the HRS documentation record as proposed). Because the Potosi area is extremely diverse geologically, insufficient geologic information was available to determine if the contaminated ground water was in two separate but contiguous aquifers or in a single aquifer. Therefore, the HRS documentation record presents an overall ground water pathway score based on a single continuous aquifer underlying the Potosi area (see page 3 of the HRS documentation record as proposed), and the score for this aquifer represents a shared overall ground water contamination risk throughout the area. The HRS documentation record also presents individual pathway scores for the same area based on two subaquifers (see Appendix A of the HRS documentation record as proposed). Both the overall and individual subaquifer pathway scores result in HRS site scores above the listing threshold of 28.50.

### 3. Summary of Comments/Correspondence

Mr. Matt Blunt of the State of Missouri Office of the Governor submitted a comment supporting the listing of this site.

Tracy Hester, Partner, Bracewell & Giuliani LLP on behalf of Baker Hughes Oilfields, Inc. (Baker Hughes), commented that “EPA should either revise its proposed listing for the Potosi area to reflect the areas actually sampled, characterized and investigated, or EPA should postpone adding the Potosi area to the NPL until EPA acquires those data.” As a result, Baker Hughes indicated that the boundaries for the Potosi area are too broad, and they lack an adequate relationship to the designated facilities’ boundaries or to the seven [sic] study areas used for the Hazard Ranking System (“HRS”) scoring. Baker Hughes argues that EPA implicitly recognized that the Potosi area boundaries are not directly linked to the observed ground water contamination that generated the HRS score by stating in the HRS documentation record that it was not possible to attribute contamination to any single mining operation.

Baker Hughes argued that a “facility” under CERCLA “must maintain a logical nexus between the geographical scope of the area of contamination and the defined boundaries of the facility.” It stated that “[i]n this regard, non-contiguous facilities may be treated as one facility where they are reasonably related on the basis of geography or potential threat to public health or welfare or the environment.” However, Baker Hughes asserted that “the necessary nexus between the geographical scope of the area of contamination and the facility . . . has become unacceptably attenuated” by unnecessarily expanding the area’s geographic scope to include many uncharacterized mines and prospects within the Potosi area boundaries and not focusing the proposed NPL listing to the nine study areas.

Baker Hughes explained that the proposed boundaries for the Potosi area encompass a much greater area than the nine study areas underlying the proposed NPL listing, and, in fact, the EPA study areas themselves include multiple mine sites. It pointed out that by including more than one mine site within a study area, EPA has unnecessarily complicated its HRS scoring assessment. Baker Hughes surmised that “[b]y using the HRS scores from a select few areas and then attributing those scores to a much larger geographic area, EPA’s approach undermines the purposes of a ‘facility’ designation and the remedial intent of CERCLA.”

Baker Hughes stated that, “EPA cannot now sweep multiple mining sites into a broadly defined facility without a clear nexus to demonstrate that these mining sites play some role in the creation of the larger plume.”

In response, EPA’s characterization of the site for the HRS evaluation is consistent with the definition of “site” as presented in the HRS. HRS Section 1.1, *Definitions*, defines “site” as:

Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between sources.

EPA also does not share the commenter’s concern that no source of contamination is identified in the HRS documentation record. For HRS scoring purposes, the Potosi site consists of a ground water plume with no identifiable source (see HRS Sections 1.1, *Definitions*, and 2.2, *Characterize sources*, and its subsections; pages 10-19 and 29-42 of the HRS documentation record as proposed; Reference 13, Figure 1, and Reference 18 of the HRS documentation record as proposed). HRS Section 1.1, *Definitions*, defines “source” as:

Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, ground water, surface water, or surface water sediments that have become contaminated by migration, except: in the case of either a ground water plume with no identified source or contaminated surface water sediments with no identified source, the plume or contaminated sediments may be considered a source.

Since the only source is the ground water lead contamination plume, the extent of this source is also considered the extent of the site for HRS scoring purposes. In the HRS evaluation, EPA defined the plume by contaminated drinking water wells that contain lead levels that meet the criteria for identifying observed releases to ground water. This approach is appropriate and reasonable under the HRS definition of “source” cited above.

Figure 1 of the HRS documentation record as proposed, in which nine smaller study areas are shown within one larger boundary, was presented in the HRS documentation record for the purpose of orienting the reader to EPA’s general area of concern within the Potosi area and explaining EPA’s approach for investigating the contamination in the Potosi area. The boundaries shown in Figure 1 are not “facility” boundaries, and do not represent the exact boundaries of the ground water contamination plume. As described below, these boundaries are yet to be determined.

As explained in the *Federal Register* notice proposing this site to the NPL, HRS scoring and the subsequent listing of a release merely represent the initial determination that an area may need to be addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (see 72 FR 53509). Future steps involve a Remedial Investigation/Feasibility Study (RI/FS) to further characterize the nature and extent of contamination. During the RI/FS process and continuing throughout the Superfund remediation process, the release may be found to comprise a larger or smaller area than originally thought based on preliminary site investigation work, as more information is learned about the source(s) and the migration of contamination (see *Washington State Department of Transportation v. U.S.E.P.A.*, 917 F.2d 1309). Through these future steps of investigation and data collection, the CERCLA “facility” will progressively become more defined. The HRS is solely a screening device to assist EPA with making a preliminary division between sites that justify further consideration due to contamination and associated risk and those that do not. Sites recommended for further investigation are listed on the NPL.

While the nine study areas and the larger Potosi area illustrated on Figure 1 of the HRS documentation do not represent specific boundaries, they do represent a general area in which EPA is concerned based on preliminary site investigation that sources of contamination are located there or that released contamination has come to be located there. Each of the study areas contains uncharacterized tailings piles/ponds that are possible sources of lead releases. EPA gave notice of this in the Site Summary section (pages 8-9) and in the Other Possible Sources section (pages 21-24) of the HRS documentation record as proposed. (See also References 27 and 28 of the HRS documentation record as proposed.) In addition, it is reasonable that ground water contamination could have migrated or currently could be migrating beyond the presently defined extent of the ground water contamination. Geology in this area is characterized by karst features as well as faulting that could result in contaminated water moving uninhibitedly and rapidly to and from different parts of the Potosi area. The contaminated area could also be smaller if areas within the plume are found to not be contaminated or to not pose significant risk during further investigation.

Finally, EPA disagrees that it should postpone the proposed listing until it obtains additional information. EPA is not required to score all of the contamination suspected to be part of a site to document that the

site qualifies for the NPL. As explained above and in the proposed rule, the further delineation of the CERCLA facility is a subsequent step in the Superfund remediation process. The decision to not wait to list the site until further sampling is consistent with decisions by the U.S. Court of Appeals for the D.C. Circuit. This Court has stated “the NPL is simply a rough list of priorities, assembled quickly and inexpensively to comply with Congress’ mandate for the Agency to take action straightaway” (see *Eagle-Picher II*, 759 F.2d at 932), and “EPA’s decision to reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites . . . is reasonable and fully in accord with congressional intent” (see *Eagle-Picher I*, 759 F.2d at 921).

#### **4. Conclusion**

The original HRS score for this site was 76.81. Based on the above response to comments, the score remains unchanged. The final scores for the Washington County Lead District – Potosi site are:

Ground Water: 100.00  
Surface Water: 60.00  
Soil Exposure: 100.00  
Air: Not Scored  
HRS Score: 76.81